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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	:	PATENT
	:	
Angelo T. DONFRANCESCO et al.	:	Appeal No.: _____
	:	
Serial No.: 09/105,150	:	Group Art Unit: 2833
	:	
Filed: June 26, 1998	:	Examiner: F. Figueroa
	:	
For: TERMINAL SYSTEM WITH	:	
DEFORMED SCREW	:	

BRIEF ON APPEAL

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APPENDIX - COPY OF CLAIMS ON APPEAL



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**APPELLANT'S BRIEF ON APPEAL UNDER 37 C.F.R. § 1.192**

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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

For the appeal to the Board of Patent Appeals and Interferences from the decision dated June 6, 2003 of the Primary Examiner twice rejecting claims 1, 4-16 and 18 in connection with the above-identified application, Applicants-Appellants submit the following brief in accordance with 37 C.F.R. §1.192.

1. Real Party in Interest

The inventors, Angelo T. DonFrancesco and Nelson Bonilla, assigned their entire right, title and interest in the patent application to Hubbell Incorporated of Orange, Connecticut.

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2. Related Appeals and Interferences

The appeal follows the May 15, 2003 Board decision reversing a previous rejection of the claims under 35 U.S.C. §103 in this application.

There are no other related appeals or interferences known to Appellant, Appellant's legal representative, or assignee, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending Appeal.

3. Status of Claims

Claims 1, 4-16, and 18 are pending.

In the Office Action dated June 16, 2003, claims 1, 4-16 and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 3,068,445 to Crowther in view of U.S. Patent No. 5,181,310 to Josephson. Claims 1, 4-16 and 18 are on appeal. No claim is allowed.

4. Status of Amendments

No amendment was filed subsequent to the June 16, 2003 Office Action.

5. Summary of the Invention

The present invention relates to a terminal assembly and a method of forming a terminal assembly. The terminal assembly 10 has a terminal base 12 with an internally threaded bore 38 and an externally thread screw shank 44 with opposite first and second ends. The head 46 of the screw 14 is located at the first end of the shank 44 and the second end 52 is circular and substantially planar. A deformation or stake 54 is formed in a portion of the external thread 50 of the shank 44 adjacent the second end 52 and extends along a cord of the second end offset and perpendicular to a

longitudinal axis of the shank (Fig. 3 and page 7, lines 3-5). The deformation limits removal of the screw 14 from the bore 38. A portion of the external thread 50 forms a deformation 56 which has a reduced width between adjacent crests thereof relative to other portions of the external thread (page 7, lines 5-9).

A backing plate 16 has a central aperture 66 for receiving the shank 44 and is positioned between the head 46 and the terminal base 12. Additionally, first and second depending tabs 60, 62 depend from backing plate 16 and are respectively received in first and second openings 40, 42 in terminal base 12 (page 7, lines 17-19).

By forming the terminal assembly in this manner, the deformation acts as a stop to limit the degree of removal of the screw from the bore in the terminal base. This allows the backout of the screw to be set to a predetermined dimension with a relatively high tolerance. Additionally, the screw can be backed out to its maximum extent without it becoming disengaged from the terminal base since the deformation prevents threading beyond the deformation. Forming the stake in the screw planar end facilitates its formation.

6. Issue Presented for Review

The sole issue presented for review is as follows:

Whether claims 1, 4-16 and 18 are unpatentable under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 3,068,445 to Crowther in view of U.S. Patent No. 5,181,310 to Josephson.

7. Grouping of Claims

For purposes of this appeal, all claims stand or fall separately.

8. Argument

A. The Rejection

Claims 1, 4-16 and 18 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,068,445 to Crowther (hereafter the Crowther patent) in view of U.S. Patent No. 5,181,310 to Josephson (hereafter the Josephson patent). The Crowther patent is cited for a terminal assembly 10 comprising a terminal base 12 having a bore 18 with an internal thread, a screw 16 having a shank 24 with opposite first and second ends and with an external thread 26, and having head 22 on the first end, and a deformation 36 in a portion of the external thread adjacent the second end forming a stop to limit the removal of the screw from the bore. The Examiner concedes that the Crowther patent "does not show the deformation being a stake."

For this element, the Examiner relies on the Josephson patent. The Examiner contends that the Josephson patent shows, in Fig. 6, that the deformation at the second end of a shank is a stake (col. 4, lines 9-11) extending along a chord transverse to the longitudinal axis of the shank. Additionally, the Examiner contends that such a deformation is an art recognized equivalent structure for the deformation in the Crowther patent.

In support of the rejection, the Examiner alleges that since these two deformations were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute the deformation of Josephson for the deformation of Crowther to prevent the screw from disengaging the terminal base.

B. The Combination of the Crowther Patent and the Josephson  
Patent Does Not Produce the Claimed Method or Structure

As seen in Fig. 2 and disclosed in col. 2 lines 27-29, the Crowther patent only teaches a deformation 36 on the last thread at the free extremity of the screw 16 to prevent full withdrawal of the screw from the base 12. As stated in the prior appeal, the Crowther patent does not disclose, teach or render obvious a stake extending in the circular and substantially planar end of a screw shank and along a chord of the second end transverse to the longitudinal axis of a screw.

Furthermore, as seen in Fig. 6 and disclosed in col. 4, lines 7-14, the Josephson patent only teaches that the tip 6 of insert 2 can be staked at 20 to upset the threads and thereby provide resistance to backing out of the fastener without specifying the location and configuration of the stake. The Josephson patent does not disclose, teach or render obvious a stake extending in the circular and substantially planar end of a screw shank and along a chord of the second end transverse to the longitudinal axis of a screw.

Thus, a prima facie case of obviousness is lacking.

As noted by the Board of Patent Appeals and Interferences, in Ex parte Angelo T. DonFrancesco and Nelson Bonilla, Appeal No. 2003-0265, a previous decision in the prosecution history of this application, each independent claim has a limitation not present in the Crowther patent. According to the Board, the difference between the Crowther patent and claim 1 is “the limitation that a deformation in a portion of the external thread of the screw adjacent the second end of the shank being a stake formed in the second end of the shank and extending along a chord of the second end transverse to the longitudinal axis of the shank.”

The difference between the Crowther patent and independent claim 11 is “the limitation that a stake is formed in and extending along a chord of the second end transverse to the

longitudinal axis of the shank of the screw wherein the stake forms a deformed portion of the external thread of the screw having a reduced width between adjacent crests thereof relative to other portions of the external thread.” Ex parte DonFrancesco, pg. 6.

The difference between the Crowther patent and independent claim 16 is “the limitation of deforming a portion of the external thread adjacent the second end of the shank of the screw to limit the amount the screw can be backed out of the bore of the terminal by staking the second end along a line extending across the second end and offset from and perpendicular to a longitudinal axis of the shank.” Ex parte DonFrancesco, pgs. 6-7.

The Board further states, on page 8, that to render a claim *prima facie* obvious, actual evidence is required. See C.R. Bard Inc. v. M3 Sys., Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998), cert. denied 199 S. Ct. 1804 (1999). If the Examiner still has not presented actual and adequate evidence that would have led one of ordinary skill in the to arrive at the claimed invention, the Examiner has not established a prima facie case of obviousness. Since the Board determined, on page 9 of this previous decision, that the Crowther patent alone did not supply adequate evidence to support an obviousness rejection, the Examiner apparently contends that the Josephson patent provides missing evidence of a stake formed in the second end of the shank and extending along a chord of the second end transverse to the longitudinal axis of the shank.

Applicants-Appellants disagree. No evidence in the Josephson patent demonstrates that stake 20 extends along a chord of the bottom of a screw. To render a stake that extends along a chord obvious, the Josephson patent would have to teach a stake that extends along a bottom of a screw that deforms threads at two circumferentially spaced locations, and prevents the screw from backing out of a hole. There is clearly no teaching or evidence of such a stake. At best, the



Josephson patent teaches staking a bottom of a screw at one circumferential location, not two circumferentially spaced locations.

Specifically, the Josephson patent, in Fig. 6, only shows a stake 20 in tip 6 of insert 2. The partial sectioned view of Fig. 6 does not clearly indicate whether the stake is partially or wholly on the side surface of the screw, and does not show that the stake extends to two spaced points on the circumference of the screw bottom, i.e., to be along a chord, as claimed. The description does not clarify the Fig. 6 illustration in merely stating that "the tip may be staked at 20 to upset the threads ...". Thus, like the Crowther patent, the Josephson patent does not show the claimed stake extending along a chord of the screw circular second end to have two circumferentially spaced points on the screw thread that are deformed.

By staking the present invention along a chord, and thereby staking two circumferentially spaced locations on the bottom of the shank of the screw according to the present claimed invention, there is a greater chance that the screw will not back out of the bore in the terminal base.

The Federal Circuit has held that despite the simple concept of an invention, the PTO has the burden of finding "the specific understanding or principal within the knowledge of a skilled artisan that would have motivated one with no knowledge of [the] invention to make the combination in the manner claimed." See *In re Werner Kotzab*, 217 F.3d 1365, 1371, 55 U.S.P.Q. 2d 1313, 1318 (Fed. Cir. 2000). The Examiner, in this situation, has not pointed to any specific principle or motivation in the prior art that would lead one skilled in the art to arrive at the invention as claimed. "[P]articular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed." *In re Werner Kozab*, 55 U.S.P.Q. 2d at 1371. If no particular finding can be made as to the reason one skilled in the art would have put a stake along a chord at the end of the

screw in the Crowther patent, then the Examiner cannot hold the invention obvious. Since the neither the Crowther patent nor the Josephson patent alone or in combination suggest modifying the screw as recited in the claims on appeal, the required teaching or suggestion to modify the patent is missing and the rejection cannot stand.

The Examiner is using his knowledge of the invention, in hindsight, to conclude improperly that one skilled in the art would have found it obvious to form a stake along a chord in the circular end of the screw shank in the Crowther patent. However, such “hindsight reconstruction” is impermissible in reaching a finding of obviousness. *See, e.g., W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d. 1540, 220 USPQ 303 (Fed. Cir. 1983).

Accordingly, claims 1, 11 and 16 are patentably distinguishable over the Crowther and Josephson patents.

#### C. Claims 4-10, 12-15 and 18 are Further Distinguished

The dependent claims recite additional features further distinguishing the Crowther and Josephson patents. Specifically, the offset and perpendicular orientation of the stake in claim 4, the reduced width in claim 5, the backing plate in claims 6-8 and 12-14, the contact in claim 9 and 15, the external thread in claim 10, and the placement of the shank in a hacking plate central aperture of claim 18 are not disclosed or rendered obvious, particularly within the overall claimed combination.

Claim 9 recites, among other things that the terminal base includes a contact 22 or 24 extending therefrom.

Regarding claims 9 and 15, the Examiner cites wire 34 as a contact extending from the terminal base. However, this wire is not a contact as claimed in the present invention. The contact of claim 9 extends from the terminal base and is not frictionally coupled thereto. As seen on page 6,

lines 15-18, of this application, flanges 22 and 24 secure the terminal base to a wiring device and provide electrical connection to the internally electrically conductive portions of the wiring device. Therefore, the contacts recited in claim 9 are patentably distinct from the wire of the Crowther device.

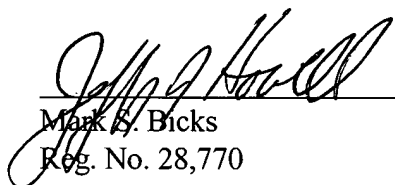
D. Excessive Number of Actions

Applicants-Appellants notes that the June 16, 2003 Office Action was at least the eighth Office Action dating back to June 4, 1999. The Actions have continually withdrawn one rejection only to supply a new rejection. In view of the substantial delays and added expense created by this examination, Applicants respectfully request a prompt and favorable judgment involving the present application.

9. Conclusion

In view of the foregoing, Applicants-Appellants submit that the rejection of claims 1, 4-16 and 18 under 35 U.S.C. §103(a) as being unpatentable over the Crowther and Josephson patents is untenable. Thus, Applicants-Appellants request that the rejection be reversed.

Respectfully Submitted,

  
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Dated: November 14, 2003

APPENDIX - COPY OF CLAIMS ON APPEAL

1. A terminal assembly, comprising:
  - a terminal base having a bore with a internal thread;
  - a screw having a shank with opposite first and second ends and with an external thread, and having a head on said first end of said shank, said second end of said shank being circular and substantially planar; and
  - a deformation in a portion of said external thread adjacent said second end of said shank, said deformation being a stake formed in said second end of said shank and extending along a chord of said second end transverse to the longitudinal axis of the shank;
  - whereby said deformation limits removal of said screw from said bore.
4. A terminal assembly according to claim 1 wherein  
said stake is offset from and extends perpendicular to the longitudinal axis of said shank.
5. A terminal assembly according to claim 1 wherein  
said portion of said external thread forming said deformation has a reduced width between adjacent crests thereof relative to other portions of said external thread.
6. A terminal assembly according to claim 1 wherein  
a backing plate has a central aperture receiving said shank and is positioned between said head and said terminal base.

7. A terminal assembly according to claim 6 wherein  
said backing plate comprises a depending tab; and  
said terminal base comprises an opening slidably receiving said tab.
8. A terminal assembly according to claim 6 wherein  
said backing plate comprises depending first and second tabs on opposite side  
edges thereof; and  
said terminal base comprises first and second openings slidably receiving said first  
and second tabs, respectively.
9. A terminal assembly according to claim 1 wherein  
said terminal base comprises a contact extending therefrom.
10. A terminal assembly according to claim 1 wherein  
said external thread has an axial length sustaining greater than an axial length of  
said internal thread.
11. A terminal assembly, comprising:  
a terminal having a base plate including a bore with an internal thread of a first  
axial length;  
a screw having a shank with opposite first and second ends and with an external  
thread of a second axial length threadedly mating with said internal thread, and having a head on

said first end of said shank, said second end of said shank being planar and circular, said second axial length being substantially greater than said first axial length; and

a stake formed in and extending along a chord of said second end transverse to the longitudinal axis of said shank, said stake creating a deformed portion of said external thread having a reduced width between adjacent crests thereof relative to other portions of said external thread, said deformed portion of said external thread forming a stop which does not threadedly mate with said internal thread.

12. A terminal assembly according to claim 11 wherein  
a backing plate has a central aperture receiving said shank and is positional between said head and said terminal.

13. A terminal assembly according to claim 12 wherein  
said backing plate comprises a depending tab; and  
said terminal base comprises an opening slidably receiving said tab.

14. A terminal assembly according to claim 12 wherein  
said backing plate comprises depending first and second tabs on opposite side edges thereof; and  
said terminal base comprises first and second openings slidably receiving said first and second tabs, respectively.

15. A terminal assembly according to claim 11 wherein  
said terminal comprises a contact extending from said base plate.
16. A method of forming a terminal assembly, comprising the steps of:  
threading an external thread of a shank of a screw into a bore in a terminal with an  
internal thread, the shank having opposite first and second ends with a head at said first end; and  
deforming a portion of the external thread adjacent the second end of the shank to  
limit the amount the screw can be backed out of the bore by staking said second end along a line  
extending across the second end and offset from and perpendicular to a longitudinal axis of the  
shank.
18. A method according to claim 16 wherein  
said shank is placed within a central aperture of a backing plate before being  
threaded into the bore.